CHICAGO RIVER BASCULE BRIDGE, MICHIGAN AVENUE
I&M Canal National Heritage Corridor
North Michigan Avenue crossing Chicago River
Chicago
Cook County
Illinois

HAER No. IL-37

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Buildings Survey
National Park Service
Department of the Interior
P.O. Box 37127
Washington, D.C. 20013-7127

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HISTORIC AMERICAN ENGINEERING RECORD

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Location:	I & M Canal National Heritage Corridor North Michigan Avenue crossing the Chicago River Chicago, Cook County, Illinois UTM: 16 E.448200 N.4637400 Quad: Chicago Loop
Date of Construction:	1920
Designing Engineers:	Bureau of Engineering, Chicago Department of Public Works; plans by Alexander von Babo
Present Owner:	City of Chicago
Present Use:	Vehicular Bridge
Significance:	The development of the Chicago trunnion bascule bridge occurred during the first three decades of the twentieth century. Despite the controversy over patent infringement -- Joseph E. Strauss charged the City of Chicago engineers with infringing on his patented Strauss-Trunion bascule bridge -- the Chicago bascule received great acclaim within the civil engineering profession. The Michigan Avenue Bridge is among the most ornate of these Chicago River bridges.
Project Information:	The Illinois and Michigan Canal was designated a National Heritage Corridor in 1984. The following year HABS/HAER embarked on an extensive inventory and documentation project of the 100 mile-long corridor. Field work for this project was concluded in 1988. Final editing of the documentation was completed in 1992.
Historians:	Charles Scott, Frances Alexander, and John Nicolay, 1986; Carolyn Brucken, 1992.

The Michigan Avenue bridge, opened in May 1920, was designed by the Bureau of Engineering, Chicago Department of Public Works, with plans prepared by Alexander von Babo. Von Babo improved the trunnion bascule bridge design with his patent for an internal rack which increased the lift to eighty degrees without interference from the truss members. Built as two parallel bridges normally operating together, the Michigan Avenue bridges were also capable of being operated individually. When the bridge was completed, it was the principal traffic route between the central business district (The Loop) and the north side of the City of Chicago. This bridge is built on the site of the former Fort Dearborn, and the bridge's sculptural reliefs depict allegorical settlement themes. During the 1920s, the bridge deck was covered by an experimental rubber tile pavement.

The Michigan Avenue Bridge is a double-deck, double-leaf, fixed-counterweight, trunnion bascule bridge. The superstructure is steel construction; the trusses contain riveted gusset-plate connections. The bridge measures 256'-0" between trunnions with a clear span of 220'-0" between piers. There is an upper and lower deck. The lower deck designed for heavier truck loads; the upper deck has six lanes, two sidewalks, and a narrow median. Bridge width is 91'-9". The bridge tender's house rises three-and-a-half stories above the water level. Neo-Classical characteristics of the bridge include bas relief figures, bull's-eye windows, a denticulated frieze, and a stepped parapet roof topped by a highly ornate decorative urn. The piers are reinforced concrete with abutments faced with granite and Bedford limestone. The substructure extends 100' below water level. A reinforced-concrete counterweight for each leaf is housed in each pier in a counterweight pit measuring 95' x 67' with a depth of 40'; in the counterweight pit a trunnion girder supports four trunnion bearings. In open position, each trunnion supports a load of 800 tons. Each leaf is operated by four 100 horsepower DC electric motors, which open the bridge in one minute.

SOURCES:

"A Double-Deck Bascule Bridge," Engineering News, v. 70 (July 17, 1913): 116-117.

"Chicago Bascule Bridge - Design and Operating Features," Engineering News-Record, v. 85 (September 9, 1920): 508-514

"Chicago Settles with Strauss for Infringing Bridge Patent," Engineering News-Record, v. 85 (December 9, 1920), 1158-59.

"Coffer Dam Experience at a Bridge in the Chicago River," Engineering News-Record, v. 83 (August 7, 1919): 268-269.

"Rubber Paving and High Curb Guards on Chicago Bridges," Engineering News-Record, v. 93 (November 13, 1924): 795.

"Six Years' Experience With Rubber Pavement in Chicago," Engineering News-Record, v. 107 (November 19, 1931): 803-804.

"Substructure of Michigan Avenue Bascule Bridge, Chicago," Engineering News-Record, v. 83 (July 31, 1919): 210-213.

Hugh E. Young, "The Michigan Boulevard Improvement," Journal of the Western Society of Engineers, v. 26 (October 1921): 360-368.